

**IN THE CLAIMS:**

Please REPLACE the claims as follows:

1. (Currently Amended) A programmable driver/equalizer for overcoming InterSymbol Interference (ISI) and other transmission impairments in a variety of transmission media, comprising:

- (a) a controllable driver set coupled to a transmission media and including compensation means compensating for self-induced ISI;
- (b) a transversal filter receiving a data input signal and coupled to the transmission media, the filter having programmable filter coefficients sets; and
- (c) means for altering the frequency response of the controllable driver set, based on a Z transform, to match the inverse of the frequency response of the transmission media.

2. (Original) The programmable driver/ equalizer of Claim 1 further comprising:

(d) means including the compensation means providing constant output peak amplitude on the transmission media independent of the programmable filter coefficients.

3. (Currently Amended) The programmable driver/equalizer of Claim 1 further comprising:

(de) logic means for switching the transversal filter and controllable drivers off high capacitance nodes when the programmable filter coefficients are inactive.

4. (Currently Amended) The programmable driver/equalizer of Claim 1 further comprising:

(df) means for reducing the (ISI) of the controllable driver set when the programmable filter coefficient are active.

5. (Currently Amended ) The programmable driver/equalizer of Claim 1 further comprising:

**(d g)** means responsive to the programmable filter coefficients sets, each providing control signals for matching the controllable driver set output to the inverse of the transmission media.

6. (Currently Amended ) The programmable driver/equalizer of Claim 1 further comprising:

**(d h)** means for storing a present data input signal bit and a history of at least two past data signal input bits in the transversal filter.

7. (Currently Amended ) The programmable driver/equalizer of Claim 1 further comprising:

**(d i)** **three stage** shift register elements in the transversal filter providing time delays in processing the data input signal.

8. (Currently Amended ) The programmable driver/equalizer of Claim 1 further comprising:

**(d j)** buffer and latch means in each stage of a 3 stage shift register in the transversal filter for storing data input signals in time sequence.

9. (Original) The programmable driver/equalizer of Claim 1 wherein the transversal filter is described by  $H(Z)=Ab_0 + Ab_1Z^{-1} + AB_2Z^{-2} + \dots AB_nZ^{-n}$  where numerical value of the coefficients are set by register values in A and B coefficient setting circuits connected to the transmission line.

10. (Original) The programmable driver/equalizer of Claim 1 wherein the transversal filter is a finite infinite response (FIR) filter.

11. (Original) The programmable driver/equalizer of Claim 1 wherein the controllable driver set comprises weighted current drivers.

12. (Original) The programmable driver/equalizer of Claim 1 wherein the transversal filter controls the activation of the controllable driver set.

13. (Currently Amended) The programmable driver/equalizer of Claim 1 wherein the programmable filter coefficients sets are set based on the characteristics of the transmission media, speed of transmission, and characteristics of a receiving unit.

14. (Original) The programmable driver/equalizer of Claim 1 wherein the coefficients of the filter are altered in small increments and matched to each other.

15. (Currently Amended) The programmable driver/equalizer of Claim 1 wherein the driver output peak amplifier is constant, independent of programmable coefficient selection.

16. (Currently Amended) A method for overcoming InterSymbol Interference (ISI) and other various transmission impairments in a variety of transmission media, comprising the steps of:

(a) connecting the a controllable driver set to an input node and to a transversal filter including a set of programmable coefficients coupled to a transmission medium;

(b) biasing the controllable driver set for constant output peak amplitude, regardless of coefficient settings; and

(c) compensating the driver for self-induced driver ISI; and

(d) altering the coefficients of the transversal filter to vary the driver set output to provide a frequency response which is the inverse of the transmission medium.

17. (Currently Amended) The method of Claim 16 further comprising the steps of:

(e) storing a present data output signal bit and a history of at least two past data signal input bits pulses in the transversal filter as time delay units.

18. (Original) The method of Claim 16 further comprising the steps of:
  - (e) enabling power settings of the controllable driver set to be used for all possible coefficient possibilities.
19. (Currently Amended) The method of Claim 16 further comprising the step of:  
(e f) reducing self-induced intersymbol interference from the drivers by the drive strength of the an output stage.
20. (Currently Amended) The method of Claim 16 further comprising the steps of:  
(e g) switching off paths to high capacitance nodes in the driver circuit when the coefficients are inactive to minimize ISI.
21. (Currently Amended) The method of Claim 16 further comprising the steps of:  
(e h) selecting a combination of control bits for the coefficient setting means to select the appropriate frequency response for the driver according to the various transmission medium conditions.
22. (Currently Amended) The method of Claim 16 wherein the controllable driver set is plural current mode differential drive circuits.
23. (Currently Amended) A program medium, executable in a computer system, for overcoming InterSymbol Interference (ISI) and other transmission impairments in a variety of transmission media, the medium comprising:
  - (a) program instructions in the medium for connecting the a controllable driver set to an input node and to a transversal filter including a set of programmable coefficients coupled to a transmission medium;
  - (b) program instructions in the medium for biasing the controllable driver set for constant output peak amplitude, regardless of coefficient settings; and
  - (c) program instruction in the medium for compensating the drivers for self induced ISI:

(d e) program instructions in the medium for altering the coefficients of the transversal filter to vary the driver set output to provide a frequency response which is the inverse of the transmission medium.

24. (Currently Amended) The program medium of Claim 23 further comprising:

(e f) program instructions in the medium for storing **a present data output signal bit and a history of at least two past digital signal bits pulses** in the transversal filter as time delay units.

25. (Original) The program medium of Claim 23 further comprising:

(e) program instructions in the medium for enabling power settings of the controllable driver set to be used for all possible coefficient possibilities.

26. (Currently Amended ) The program medium of Claim 23 further comprising:

(e f) program instructions in the medium for reducing self-induced intersymbol interference from the drivers by the drive strength of an output stage.

27. (Currently Amended l) The program medium of Claim 23 further comprising:

(e g) program instructions in the medium for switching off paths to high capacitance nodes in the driver circuit when the coefficients are inactive to minimize ISI.

28. (Currently Amended ) The program medium Claim 23 further comprising:

(e h) program instructions in the medium for selecting a combination of control bits for the coefficient setting means to select the appropriate frequency response for the driver according to the various transmission medium conditions.

✓ 29, (Currently Amended) The programming medium of Claim 23 further comprising:  
(e i) program instructions in the medium for biasing the controllable driver set for constant output peak amplitude, regardless of coefficient settings; and

(fj) program instructions in the medium for altering the coefficients of the transversal filter to vary the driver set output to provide a frequency response which is the inverse of the transmission medium.

30. Canceled.

31. Canceled.

32. Canceled.

33. (NEW) A programmable driver equalizer for overcoming InterSymbol interference (ISI) and other transmission impairments in a variety of transmission media, comprising:

- (a) a controllable driver providing true and compliment outputs to a transmission line;
- (b) a set of coefficient compensation level circuits coupled to the transmission lines for reducing self-induced driver ISI;
- (c) a transversal filter providing true and complement control signals to the driver, the filter including coefficient driver setting circuits, one circuit coupled to the true and the other coupled to the compliment lines and both having programmable filter coefficients; and
- (d) means for altering the frequency response from the controllable driver based on a Z transform matching the inverse of the frequency response of the transmission medium.

34. (NEW) The programmable driver equalizer of claim 33, further comprising: a power down circuit, which switches the transversal filter off high compacitance nodes when the filter coefficients are inactive.

35. (NEW) The programmable driver/equalizer of claim 34, further comprising:  
a power down signal, which operates the power down circuit to lower the power applied to the transmission line via a current amplifier.
  
36. (NEW) The programmable driver/equalizer of claim 34, further comprising:  
an output current source connected to the transmission line and switched off when the power down circuit is activated providing a high impedance pass to ground thereby increasing the transmission line bandwidth and reducing InterSymbol interference.